Introduction to Robotics – Exercise 4

Date of submission – Presentation: 9.01.21 (23:59)

Project: 14.01.21 (23:59)

Presenation Day - **11.01.21**

The assignment

- Create a foraging team as discussed in class:
  - Register on google docs and get you controller ID: **https://docs.google.com/document/d/1kUkoZFtnv0MI_6k-YcNhfcUMROwhlRz3prVioFQWDUc/edit**

    (The order of presenting in class will be according to your controller id number)
  - Create new controller 'foraging_controller_X' (s.t X is your controller ID) which inherits from the ABSTRACT class 'foraging_controller'
  - Implement 'setup' and 'loop' function
  - In the configuration file change the second controller to your controller and make sure you manage to play against the DUMMYagent (foraging_0)
- Your controllers will test against each other
- Your controllers will also test in arenas that contain obstacles - your teamshould know how to deal with it
- If any, the obstacles in the arena will be of the 'box' type

- Prepare a presentation that describes your team's strategy:
  1. Which of the state machines did you choose to implement? (it's OK if you chose one that was not shown in class!)
  2. What is the behavior of your team in each of the states?
  3. Do the robots react differently to their team members compared tothe opponents? explain what a robot does in these situations.
  4. How did you compete against your "red team"?
  5. Until the submission date – do you plan to add\change something?
  6. You can add a short (no more than 30 seconds) video if you want
  7. An explanation of anything else that is special/ interesting about your team.

*** until the 9/1 you'll submit a temporary presentation that you attend to present in class - showing your results up to that date

you'll have 5-7 minutes to present

**** The final Report that needs to be added to the project itself can (and should) belonger, more detailed and more up to date.

***In addition you should submit a short "red team" report describing the red team controller you implemented and whether it helped in improving your main controller.

Attached files

- A folder 'foraging_controller' – the abstract class your controller needs toinherit from
- A folder 'foragin_controller_0' – a DUMMY team you can use as the base ofyour code and as an opponent
- An argos file – tournament.argos – the configuration file – you need tochange the competitive controllers in order to test your team
- A folder 'tournament_loop_functions' – you should append to yourloop_functions folder
- A folder 'footbot_foraging'– a controller you need to add to your Controllers folder

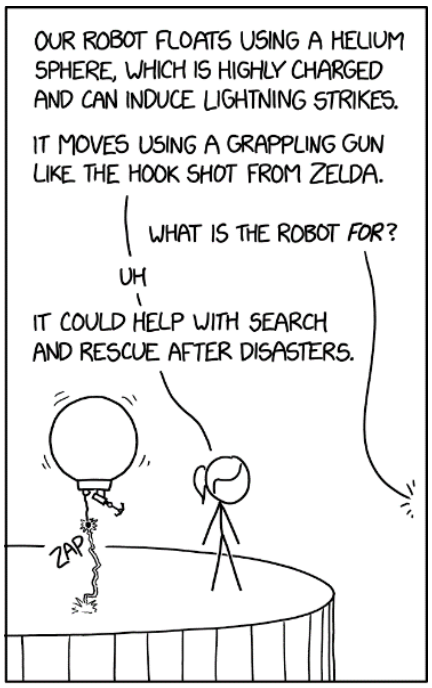
Rules

- At no point – do not change the robot color (do NOT use krembot.Led.write())
- You are not allowed to use the positions the robot postion/orentation from the foragingMsg.
- ForagingMsg will include:
    - std::string ourColor;
    - std::string opponentColor;
    - std::string ourBaseColor;
    - std::string opponentBaseColor;

  You can and should use all these parameters in your implementation.
- Make sure that your code is tidy and well-commented.
- Make sure that your names and IDs are listed at the beginning of every file
- Your names and IDs and any source you used should be written in a README

What to Hand In

- Until the 9.01 - submit the presentation that you attend to present in class - showing your results up to that date
- Until the 14.01 - You should hand-in your controller folder and your final report as described above in PDF format.
    - Your other team member should submit the Red Team part. (Those who are alone are exempt from doing the Red Team controller).
- You should not hand in executable files, or any other files that can be regenerated.



"IT COULD HELP WITH SEARCH AND RESCUE" IS ENGINEER-SPEAK FOR "WE JUST REALIZED WE NEED A JUSTIFICATION FOR OUR COOL ROBOT."

GOOD LUCK! :)